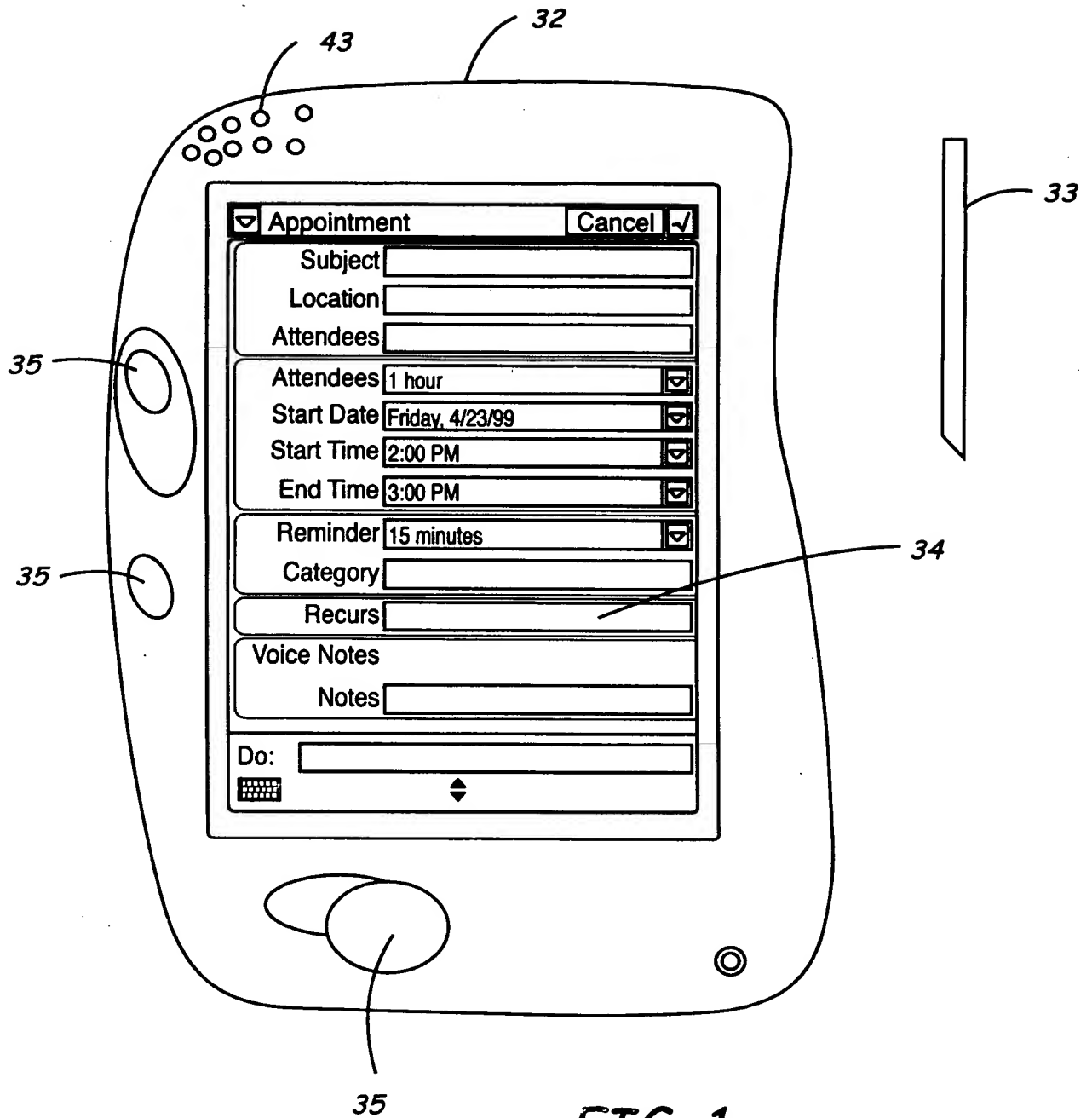


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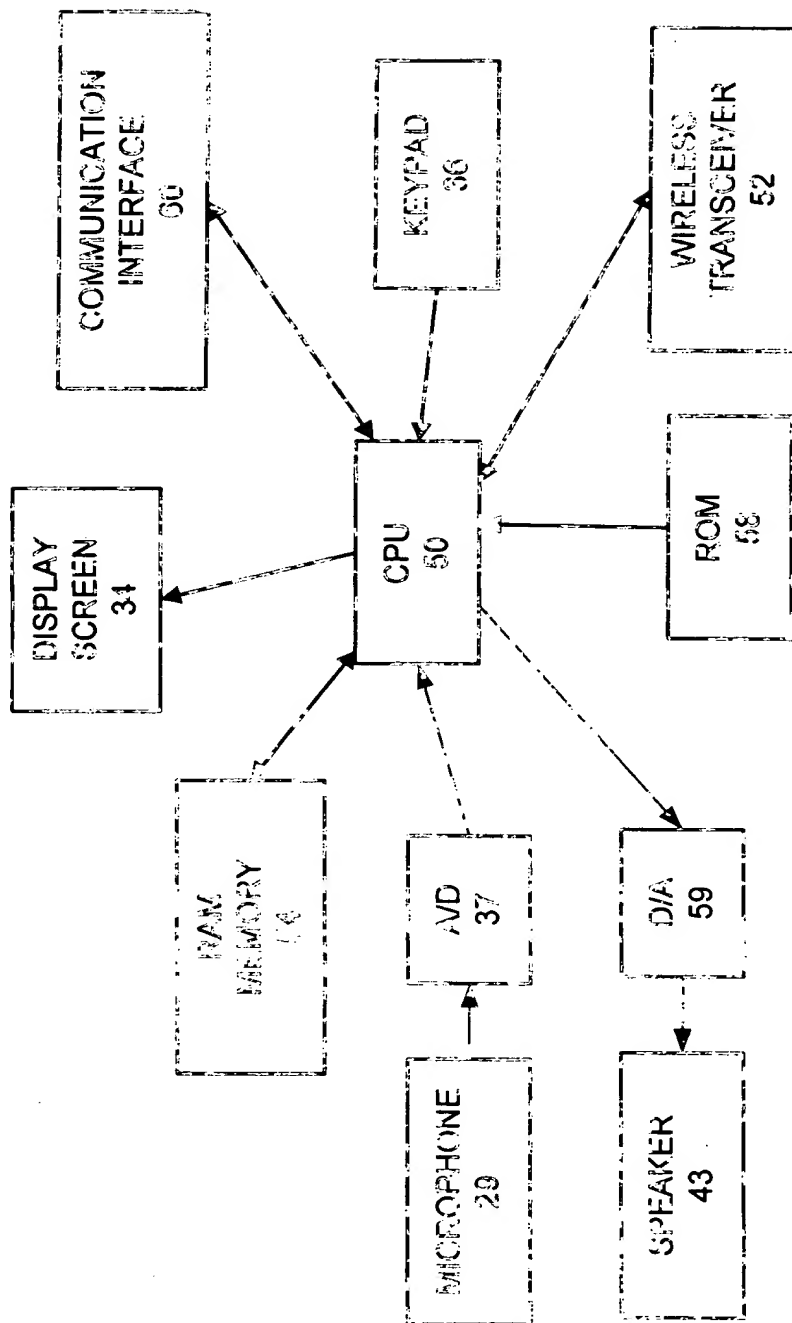


FIG. 2

**FIG. 3**

80

82

84

1

2 ABC

3 DEF

4 GHI

5 JKL

6 MNO

7 PQRS

8 TUV

9 WXYZ

\* SPACE

0

# ACCEPT

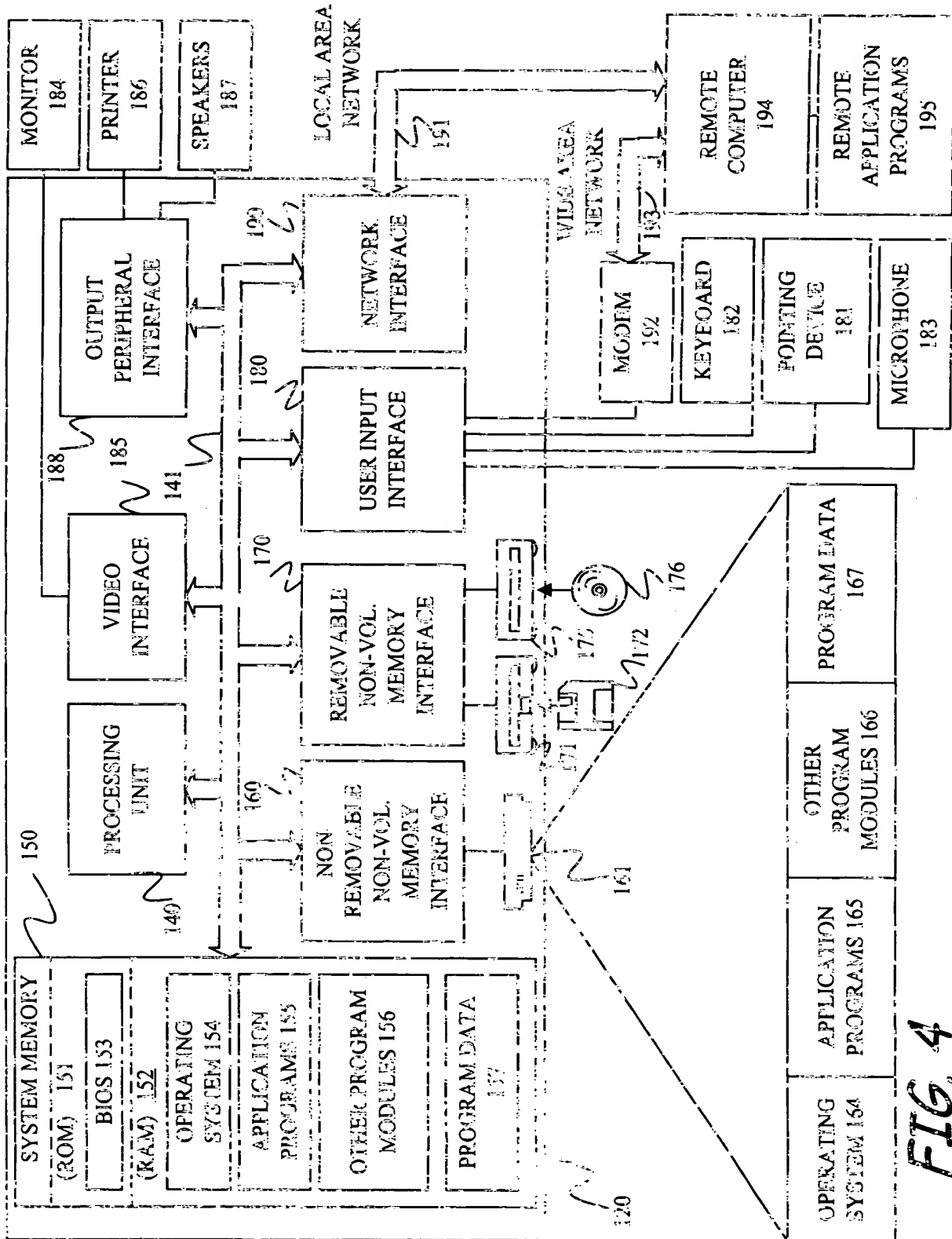
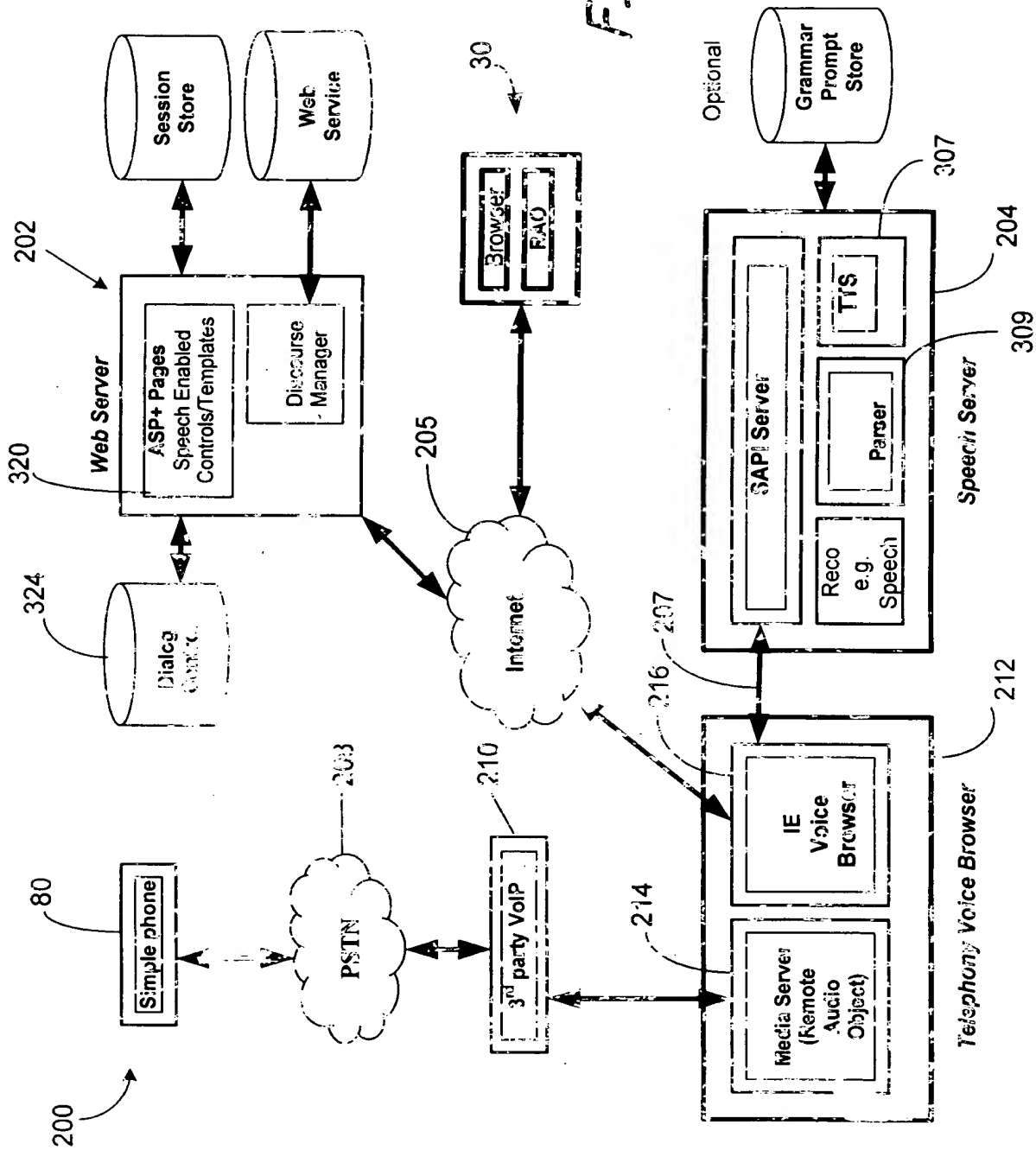
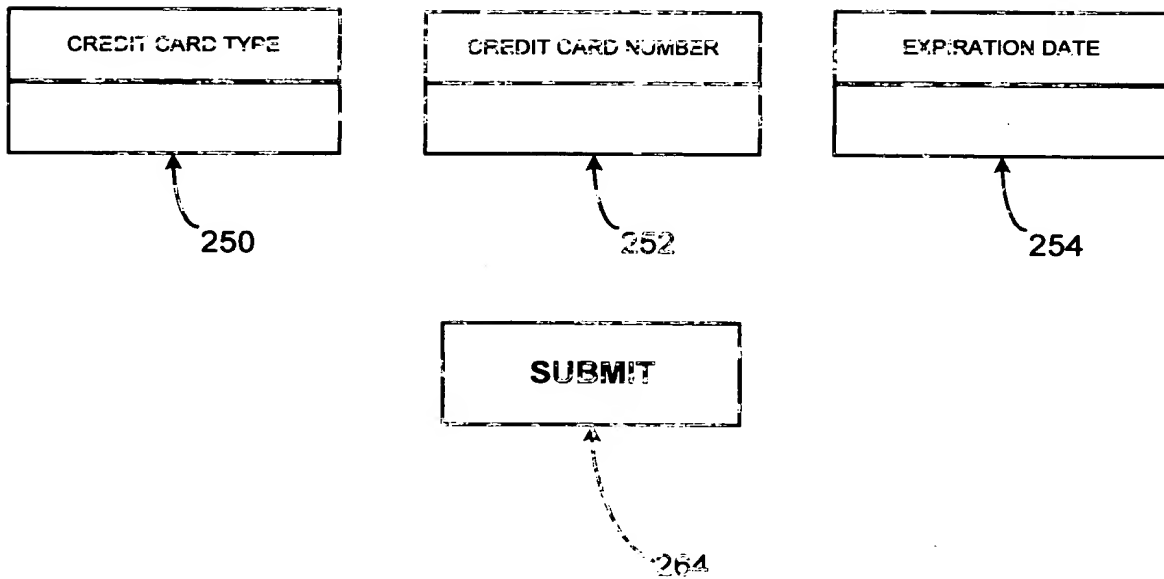


FIG. 4

FIG. 5



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**FIG. 6**

```

260 <html>
    <form id="get_card_info" method="post" action="http://payment.asp">
        <select name="card_type">
            <option value="amex">American Express</option>
            <option value="visa">Visa</option>
            <option value="ms">MasterCard</option>
        </select>
        <input type="text" name="card_num" width="30"
            onChange="handle()" />
        <input type="text" name="expiry_date" />
        <input type="submit" value="Submit" onClick="verify()" />
    </form>
    <script><[[CDATA[
        function handle() {
            if (get_card_info.card_type.value == 'amex') {
                if (get_card_info.card_num.length != 15) {
                    alert ("amex should have 15 digits");
                } else
                if (get_card_info.card_num.length != 16)
                    alert ("visa and master should have 16 digits");
            }
            function verify() {
                var flag = window.confirm("submit the credit card info?");
                if (flag)
                    get_card_info.submit();
            }
        }
    </script>
</html>
262

```

FIG. 7

```

270 <html>
    <form id="g_card_info" method="post" action="http://payment.asp">
        <select name="card_type" onClick="talk(g_card_types)">
            <option value="amex">American Express</option>
            <option value="visa">Visa</option>
            <option value="mc">Master</option>
        </select>
        <reco id="g_card_types" onReco = "handle()" >
            <grammar src="/gram#card_types" />
        </reco>
        <input type="text" name="card_num" width="30"
            onClick="talk(g_card_num)" />
        <reco id="g_card_num" onReco = "handle()" >
            <grammar src="/gram#digits" />
        </reco>
        <input type="text" name="expiry_date"
            onClick="talk(g_expiry_date)" />
        <reco id="g_expiry_date" >
            <grammar src="/gram#dates" />
        </reco>
        <input type="submit" value="Submit" onClick="verify()" />
    </form>
    <script><![CDATA[
        function talk(gobj) {
            gobj.activate();
        }
        function handle() {
            if (get_card_info.card_num != null) {
                if (get_card_info.card_type.value == "amex") {
                    if (get_card_info.card_num.length != 15)
                        alert ("amex should have 15 digits");
                } else
                    if (get_card_info.card_num.length != 16)
                        alert ("visa and master should have 16 digits");
            }
        }
        function verify() {
            var flag = window.confirm("submit the credit card
            info?");
            if (flag) {
                get_card_info.submit();
            }
        }
    ]>
    </script>
</html>

```

270 points to the opening `<html>` tag.

280 points to the `<select>` block.

282 points to the `<input type="text" name="card_num" width="30" onClick="talk(g_card_num)" />` line.

284 points to the `<input type="submit" value="Submit" onClick="verify()" />` line.

290 points to the `<reco id="g_card_types" onReco = "handle()" >` block.

272 points to the `function handle()` block.

FIG. 8



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```

< body >
  < form id = " get_card_info " method = " post " action = " http://payment.asp "
    onActivate = " welcome() ">
    < prompt id = " p_welcome "> We now need your credit card </ prompt >
    < prompt id = " p_mumble "> I didn't understand you </ prompt >
    < prompt id = " p_card_type " bargain = " true "> What credit card would you
300 use? </ prompt >
    < prompt id = " p_card_num " bargain = " true "> Please say the number </ prompt >
    < prompt id = " p_expiry_date " bargain = " true "> What is the expiration
303 date? </ prompt >
    < prompt id = " p_content ">
      I have your < value select = " card_type " /> < value select = " card_num " />
      with expiration date
      < value select = " expiry_date " />
    </ prompt >
    < prompt id = " p_confirm "> Is this correct? </ prompt >
    < reco id = " g_card_types " onNoReco = " mumble(this, 2) ">
      onReco = " _handle(this, card_type) " />
    < grammar src = " ./gram#card_types " />
    </ reco >
    < reco id = " g_card_num " onNoReco = " mumble(this, 1) ">
      onReco = " _handle(this, card_num) " />
    < grammar src = " ./gram#digits " />
    </ reco >
305 < reco id = " g_expiry_date " onNoReco = " mumble(this, 1) ">
      onReco = " _handle(this, expiry_date) " audio = " rao " />
    < grammar src = " ./gram#dates " />
    </ reco >
    < reco id = " confirmation " onReco = " confirmed(this) " />
    < grammar src = " ./gram#yesno " />
    </ reco >
    < select name = " card_type ">
      < option value = " amex "> American Express </ option >
      < option value = " visa "> Visa </ option >
      < option value = " ms "> MasterCard </ option >
    </ select >
    < input type = " text " name = " card_num " width = " 30 " />
    < input type = " text " name = " expiry_date " />
    < input type = " submit " value = " Submit " />
  </ form >
  < script > <![CDATA[
    function welcome() {
      p_welcome.active();
      repeat = 0;
      checkFilled();
    }
    function mumble(gobj, maxprompts) {
      gobj.deactivate();
      p_mumble.active();
      checkFilled();
    }
  ]>
302

```

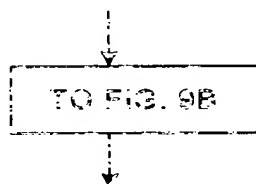


FIG. 9A

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```
function _handle() {
  handle();
  checkFilled();
}
function checkFilled() {
  if (card_type.value == "") {
    p_card_type.activate();
    g_card_types.activate(); return;
  }
  if (card_num.value == "") {
    p_card_num.activate(); g_card_num.activate(); return;
  }
  if (expiry_date.value == "") {
    p_expiry_data.activate(); g_expiry_date.activate(); return;
  }
  p_content.activate();
  p_confirm.activate();
  confirmation.activate();
}

function confirmed(gobj) {
  if (gobj.recogRes.text == "yes")
    get_card_info.submit();
}
//
// user codes start here
//
function handle() {
  if (get_card_info.card_type == "amex") {
    if (get_card_info.card_num.length != 15) {
      prompt.speak ("amex should have 15 digits");
      get_card_info.card_num = "";
    }
  } else
    if (get_card_info.card_num.length != 16) {
      prompt.speak ("visa and master should have 16 digits");
      get_card_info.card_num = "";
    }
  }
}}>
</script>
</body>
```

**FIG. 9B**

**FIG. 10A**

TO FIG. 10B

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```

function checkfilled() {
    if (card_type.value == "") {
        p_card_type.activate(); do_field.activate(); return;
    }
    if (card_num.value == "") {
        p_card_num.activate(); do_field.activate(); return;
    }
    if (expiry_date.value == "") {
        p_expiry_date.activate(); do_field.activate(); return;
    }
    p_content.activate();
    p_confirm.activate();
    confirmation.activate();
}
function confirmed(gobj) {
    if (gobj.recogRes.text == "yes")
        get_card_info.submit(gensml());
}
// user codes start here
function handle() {
    if (field == get_card_info.card_num) {
        if (get_card_info.card_num.length != 15) {
            prompt.speak ("amex should have 15 digits");
            get_card_info.card_num = "";
        }
    } else
        if (get_card_info.card_num.length != 16) {
            prompt.speak ("visa should have 15 digits");
            get_card_info.card_num = "";
        }
    }
}
function gensml() {
    str = "<sm1><credit_card type="";
    str += card_type.value; str += "><number>";
    str += card_number.value; str += "</number><expire>";
    str += expiry_date.value; str +=
    "</expire></credit_card></sm1>";
    return str;
}
//>
</script>
</body>

```

**FIG. 10B**

## SAMPLE ASP+ PAGE

```

<%@ Page language="Jscript" AutoEventWireup="false" Inherits="Credit.Transaction" %>
<html><head>
<!-- ASPX page for both voice-only & multimodal credit card example -->
<script>
function handle() {
    if (field == get_card_info.card_num) {
        if (get_card_info.card_num.length != 15) {
            prompt.speak ("amex should have 15 digits");
            get_card_info.card_num = "";
        }
    } else
        if (get_card_info.card_num.length != 16) {
            prompt.speak ("visa should have 15 digits");
            get_card_info.card_num = "";
        }
    }
}

function gensml() {
    str = '<sml><credit_card><card_type>';
    str += card_type.value; str += '</card_type><number>';
    str += card_number.value; str += '</number><expire>';
    str += expiry_date.value; str += '</expire></credit_card></sml>';
    return str;
}

</script>
<script runat="server">
function Page_Load (obj, args) {
    if (PostBack) {
        validator = new System.Speech.SMLValidator("./CreditSDL.xml");
        dsml = validator.Evaluate(args);
        Navigate(ChoosePage(dsml));
    } else {
        // initialize fields with args
    }
}

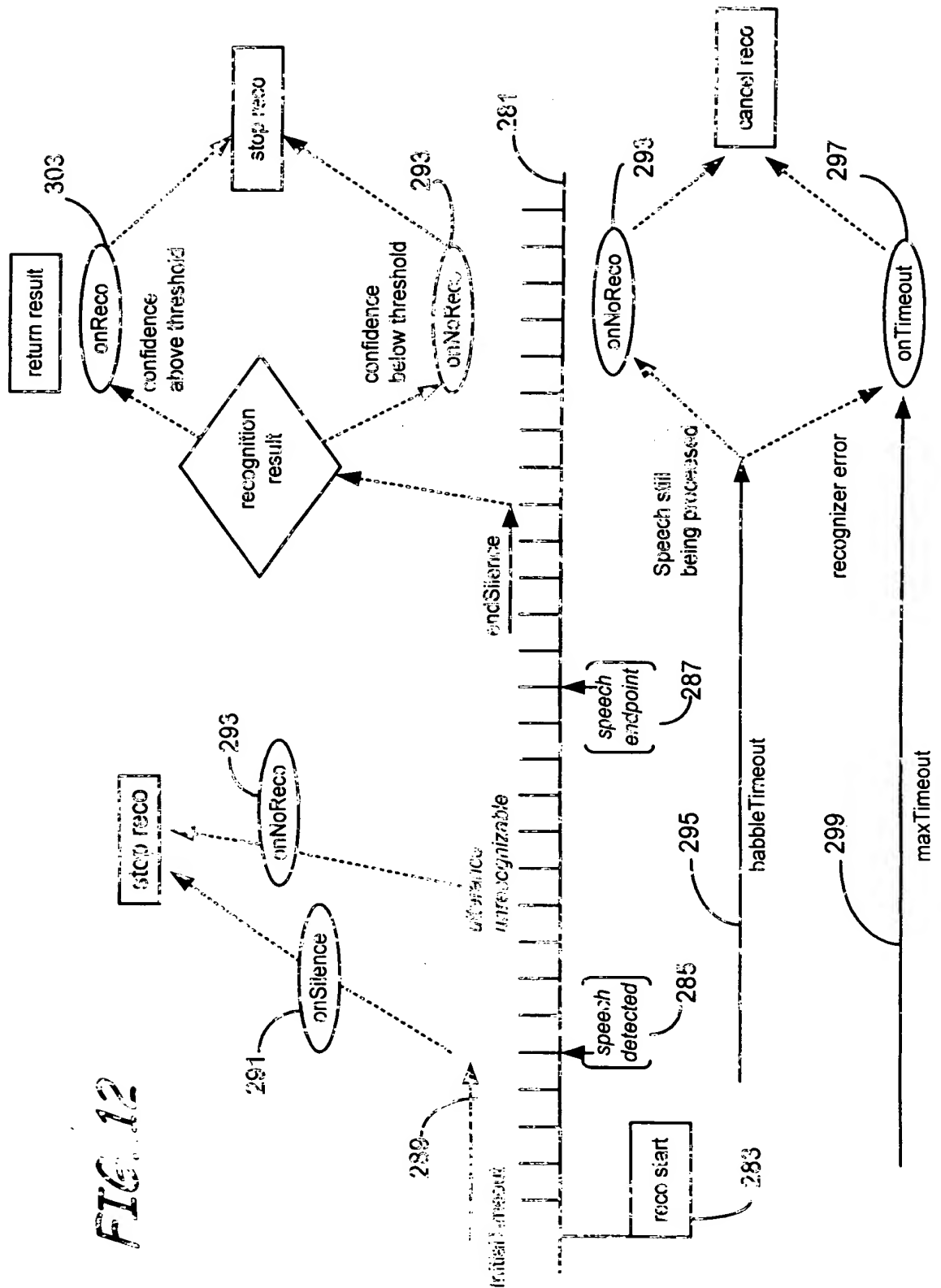
</script>
</head>
<body>
<speech:form id="get_card_info" style="system_initiative"
    prompt=" /prompt/getPayment" onsubmit="gensml()">
    <speech:choice name="card_type" prompt="What credit card would you use?"
        grammar="/gram#card_types" onPhraseFinish="handle()"
        <option>American Express</option>
        <option>Visa</option>
        <option>Mastercard </option>
    </speech:choice>
    <speech:textbox name="card_number" prompt="Please say the number"
        grammar="/gram#digits" onPhraseFinish="handle()">
    <speech:textbox name="expiry_date" prompt="What is the expiration date? "
        grammar="/gram#dates" onPhraseFinish="handle()"/>

</speech:form>
</body>
</html>

```

FIG. 11

FIG. 12



**FILE 13**

